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BOOK REVIEWS.

LEHRBUCH DER PSYCHOLOGIE. Von *Friedrich Jodl*, o. ö. Professor der Philosophie an der Universität zu Wien. Stuttgart: J. Cotta. 1896. Pages, 767. Price, M. 12.

Prof. Friedrich Jodl has condensed and presented in a systematised form an enormous number of facts in the present work on psychology, which is written as a text-book for students. Professor Jodl, more than any other German psychologist, is influenced by the English school, which is commonly called the association psychology. But he has grown beyond the narrowness which marks the English associationists. He has also incorporated in his studies the results of experimental psychology, without, however, over-estimating its importance. Not the least valuable feature of the book consists in the references to the literature of the subject which are added to each chapter.

Professor Jodl defines psychology as "the science of the forms and laws of the "normal processes of the phenomena of consciousness which in the animal organism of man stand in relation to the surrounding media, the totality of which is "called psychic functions" (p. 5). In a note he adds to the word *Bewusstseinserscheinungen*, that no language possesses an adequate word covering this term, claiming that Huxley's proposition of introducing "psychosis" had found little approbation; that "idea" had too many other meanings, and that "mind" came nearest to it while the French *esprit* is too general. We would suggest that *Bewusstseinserscheinungen* is exactly translated by "phenomena of consciousness," which, however, is quite different from "phenomena of mind," for some phenomena of mind may take place without being accompanied by consciousness. The phenomena of mind (or, mental phenomena) are the intellectual functions of man's soul, viz., arguing, and reasoning. Pain is not a mental phenomenon but a phenomenon of consciousness, while an unconscious syllogism is a mental act. At the same time we venture to say that the term "psychosis" has become quite common in English, and it is generally understood in the sense that Huxley used it.

Modern psychology practically begins with Hume who was the first to doubt the traditional soul conception that conceived of the soul as a thing-in-itself which

was in possession of its qualities and performed the functions of thinking and feeling. Hume said: "Whenever I contemplate what is inmost in what I call my own self, I always come in contact with such or such special perception, as of cold, heat, light or shadow, love or hate, pleasure or pain. I never come unawares upon my mind existing in a state void of perceptions. I never observe ought save perception." Kant followed Hume in his critical attitude and declared that the ego-conception was one of the fallacies of pure reason. Modern investigators, among them Herbart, were obliged to follow Hume and Kant, and there is at present no scientific psychologist who does not stand upon the same ground. There are a few who still try to rescue the old psychology by attacking the new psychology and branding it as a psychology without a soul, but they are no longer in the lead and must concede that their position is purely hypothetical. A great number of psychologists tried to avoid the problem and leave the question in an unsettled state, assuming the attitude of investigators and waiting for further evidence.

Jodl is not among those who withhold their own opinions, but pronounces his views without any equivocation as follows: "The sum-total of all the phenomena 'of consciousness given in inner perception are commonly comprehended in the designation 'soul,' as if soul were a substantive, and the substantial bearer of the processes of consciousness to which they are to be referred. This is quite objectionable so long as the symbolical character of the expression is heeded, so long as we understand the name soul to be an abbreviated term for the totality of the data of consciousness. Every attempt to change the logical and grammatical meaning of the word soul into an ontological one, and to conceive of the totality of the psychic processes as a real subject which is supposed to be a substance independent of the physical organism, distinct and separable from it, involves us in a tangle of difficulties and must be most decidedly rejected by science. The soul does not have states or faculties, as thinking, conceiving, enjoying oneself, hating, etc., but all these states in their totality are the soul. It is the same with the physiological processes which in their totality constitute what we call life, for life neither is a separate power or substance by the side of the vital processes. In the sense of the old soul-substance theory, the scientific psychology of to-day is indeed a psychology without a soul, for the true object of science is the living organism, part of whose functions are the phenomena of consciousness. But for that reason the common objection to the idea of a power which would not be the power of a being and of an activity which would hover in the air without a substratum as unclear and contradictory, has no sense. Unclear and contradictory is only the assumption of a soul-substance that would be independent of the living organism" (pp. 31-32).

Professor Jodl is quite unequivocal in his statements that consciousness and life are two phases of the same process, and he adopts the so-called dual-aspect theory of a psychical and physiological parallelism, first pronounced by Clifford. He says that even the highest psychical phenomena cannot be without their physio-

logical accompaniments, and insists again and again on the close connexion between consciousness and organised life. Jodl does not, however, propose to materialise in this way the soul of man, but means to spiritualise the mechanical phenomena, finding in chemotropism and similar processes of the vegetable world, indications of psychic phenomena which form the transition from the mineral world to animal life.

The most salient feature of consciousness is, as Jodl rightly remarks, its organisation. Consciousness is never punctual, it is never an isolated feeling but always a complex of feelings, which is the necessary correlate to the physiological fact that every animal organism is a complex system of nerve-fibres and centres. When we speak of consciousness we have always to deal with a plurality of perceptions in their mutual relations (p. 95). And wherever consciousness rises into existence an organised being feels itself as a separate entity in contradistinction to the surrounding world, thus creating a condition which makes it possible to speak of inner states as opposed to external reality. This is the reason why every psychic phenomenon refers to the whole of the psychic organism, to the ego, and every elimination of the ego in this sense from the realm of psychology proves futile. For it is impossible to describe psychic states in expressions which refer merely to objects. The term spiritual or subjective always implies a relation to the ego in the sense of the psychic totality (p. 91). Thus a psychic condition without the ego is impossible and can never become a conscious state. Here of course Professor Jodl distinguishes the elementary ego such as is shared also in a vague sense by animals from the higher organised ego-idea of man.

On this basis Professor Jodl proceeds to a special treatment of psychology which embraces the second and more voluminous part of his work, and distinguishes three activities which, however, are not distinct faculties but three phases of one and the same process. He calls the condition that originates through external impressions, sensation (*Empfindung*), the commotion which internally originates from sensations, emotion (*Gefühl*), and the reaction resulting in muscular movements, volition (*Wille* or *Strebung*). Thus the entire activity of the soul is the product of two qualities, its receptivity and its spontaneity. The soul receives impressions of the outer world and reacts against them spontaneously, the intermediate condition of which is a state of psychic tension, constituting the internal life of pleasure and pain, sentiment, passion, etc. Sensation arises in response to a stimulus. Emotion or sentiment does not possess presentative value but is qualified as pleasant or unpleasant; a volition expresses the adjustment of an organism to its surroundings.

The second and special part of Professor Jodl's psychology again contains two divisions: first, he treats in Chapters IV.-VII. of the primary stages of soul-life as they appear in sensations, sentiments, and in volitions; while Chapters VIII.-XII. are devoted to a discussion of the secondary and tertiary soul processes. In the former division Professor Jodl treats the problems of psycho-physics and the activities of the various sense-organs. He discusses illusion and hallucination (IV.,

16), the qualities of sensation, intensity of sensation, etc., etc., Fechner's formula and the difference of Weber's law from Fechner's propositions, the applicability of Weber's laws and their limits (66). The first division of Chapter V. treats of the sensations of vitality, the summation of irritations, cœnæsthesis. etc. The second installment discusses the sensations of motion, entering upon and combating the idea of a sensation of innervation, etc. The third division is devoted to the sensations of the skin and its powers of localisation, and to general sensibility. The fourth division is devoted to taste and smell; the fifth to hearing.

Here we might incidentally mention that Helmholtz's theory of *Klangfarbe* (mentioned in § 112 of Jodl's book) was first pronounced by Grassmann, and it is, to say the least, not improbable that Helmholtz knew of Grassmann's investigations but forgot to mention them when publishing the results of his own.

The sixth division of Chapter V. is devoted to seeing. Here the important problems of optic illusions of binocular vision, corporeality of the pictures of the eye, the contrast of subject and object in the act of seeing, etc., etc., are discussed with great discrimination.

Chapter VI. is devoted to the primary sensations, pleasure, pain, and perception of contrast in feelings of more or less. Professor Jodl regards both pleasure and pain as positive phenomena showing merely quantitative differences. Chapter VII. discusses the meaning and nature of volitions, as well as the conditions of attention, all subjects of importance which we could not touch upon without becoming lengthy.

The secondary and tertiary phenomena of soul-life are the result of reproduction, the nature of which Professor Jodl explains on pages 448 et seq. as the basis of all higher life.

The phenomena of memory are treated along the lines of Professor Hering's investigations. Memory is not a special faculty of consciousness, but it is a general condition of organised substance. The main deficiency in this part of Professor Jodl's book is his omission of discussing the origin of re-representative ideas or concepts. Here he follows too closely the lines of association psychology, and overlooks the importance which is produced by the fusion of memory-images of the same kind into composite pictures.

Chapter IX. is devoted to the three fundamental notions of time, space, and objective reality, as produced by the contrast of the ego and the non-ego. Chapter X. discusses the origin of speech and of thought which, according to Professor Jodl, are not identical. Here psychology comes in contact with grammar and logic, to which two special divisions are devoted (pp. 594 to 613 and 613 to 614). Chapter XI. discusses the secondary and tertiary sentiments, among them the sense of humor, wit, the comical, sense of honor, shame, sympathy, vanity, love, love of children, envy, etc., etc. The conclusion of Chapter XI. is a transition to the last chapter of the book, pointing out the superindividual sentiments and the contrast of heteronomous and autonomous morality. The problems discussed in the last chapter

on the secondary and tertiary volitions are not the least interesting of the whole book, discussing such problems as freedom of will and character-formation.

In sketching the contents of the special part of Professor Jodl's book, we regret only that we cannot enter into a further analysis of his valuable work, but if we attempted to do so we should have to write a book instead of reviewing one. That Professor Jodl's book is a most valuable contribution to modern psychology there can be no doubt, and we do not exaggerate when saying that no psychological library can be complete without it.

P. C.

DIE PRINCIPIEN DER WÄRMELEHRE. Historisch-kritisch entwickelt von *Dr. Ernst Mach*, Professor an der Universität Wien. Mit 105 Figuren und 6 Porträts
Leipzig: Johann Ambrosius Barth. 1896. Pages, 472. Price, M. 10.

A marked feature of recent positive research has been its alliance with philosophical criticism. The appearance of this new cast of thought was cotemporary with the renaissance of philosophical interest, which in the years succeeding the magic sway that German metaphysics held over men's minds, steadily waned before the light that the successful achievements of science spread over the intellectual world. Men had sought to scale like Prometheus of old by one fell metaphysical bound the celestial heights and to wrest by violence the secret of the universe from the hands of its heavenly keeper, only to fall back empty-handed and lamed, and to find the treasures they were seeking poured with a lavish hand from another source into the laps of their fellow creatures. Yet they had not cut their fantastic tricks before high heaven totally in vain, nor risked their glassy essence wholly to no purpose. Their feats had at least a calisthenic import. And when with the mighty onward progress of science, its concentrating of its lines of research, its probing of the last foundation-stones of knowledge, perplexities arose in the minds of inquirers at the unwonted problems confronting them and misgivings as to the right estimate of their achievements, it was found that in the despised Promethean feats of their predecessors, empty as these were in themselves and for the purposes to which they had been put, much of the method and attitude was contained that was to stand them in absolute stead in their further quests. From this dates a new era in mental inquiry.

The blending of science with philosophy and of philosophy with science now characterises the work of the best and foremost inquirers of both departments. Not that the two branches were always absolutely separated: nor that they were not in their origin (and at times in their development) identical; nor that even now they do not pursue merely different aspects of the same aim; but that, having been clearly and definitively differentiated, each is now accorded its just function and due. And wonderful fruits have grown from their union, which have redounded to the untold benefit of both. How enlightening and satisfactory philosophy is becoming, even in its mediocre representatives; how critical the verdicts of science, even in its lesser votaries! We could cite many eminent names of recent in-